

Express Mail No. EV354970718US

## **APPLICATION FOR UNITED STATES PATENT**

Title:           **METHOD OF ROLLING FOLDED MEMBRANE  
SHEETING WITH PREAPPLIED SEAM TAPE**

Applicants:   **David Robison and Jay Esmon**

Gregory J. Lunn  
Wood, Herron & Evans, L.L.P.  
2700 Carew Tower  
Cincinnati, Ohio 45202  
Attorneys  
513/241-2324  
Attorney Docket: CRS-278-111

## **SPECIFICATION**

**METHOD OF ROLLING FOLDED MEMBRANE  
SHEETING WITH PREAPPLIED SEAM TAPE**

**Background**

5                   Single-ply membrane sheeting incorporates a single-ply  
polymeric membrane as a water barrier for roof surfaces, pond liners, and  
the like. As it is impractical to manufacture polymeric sheeting which is  
large enough to cover most roofs and ponds, individual sheets are  
adhered together along lap seams to form a continuous water impervious  
sheet.

10                   In the past the lap seams have been completely formed at  
the construction site. This requires that, when necessary, the overlapping  
edges be cleaned, a primer applied and then an adhesive. Adhesive  
seam tape is frequently used. There are a variety of different roofing  
seam tapes that can be applied. These are very tacky. Upon contact  
15 they adhere to the seam of the sheeting.

In order to reduce on-site labor, it is desirable to have the  
seam tape preapplied to the roofing membrane. Unfortunately, when one

preapplies seam tape to the edge of a membrane, it interferes with storing and shipping the sheeting. Typically the sheeting is rolled onto a cylindrical core. Because typical sheeting has a uniform thickness, one can roll an indefinite length of material on the core. However, when a  
5 seam tape is applied to the edge of the sheeting, it cannot be simply rolled. The seam tape edge is thicker than the remaining portion of the sheet. Rolling this would form a conical-shaped roll. This interferes with shipping.

#### **Summary of the Invention**

10 The present invention is premised on the realization that membrane sheeting having a preapplied seam tape can be rolled into a roll by applying seam tape to one edge of the sheeting and folding the second edge of the sheeting back onto itself so that it abuts the edge of the seam tape but does not overlap the seam tape. Thus, the folded  
15 portion of the sheeting will have a thickness approximately equal to or slightly greater than the edge of the sheeting with the seam tape. This can be rolled without any bulge on the edge.

The objects and advantages of the present invention will be further appreciated in light of the following detailed description and  
20 drawings in which:

**Brief Description of the Drawings**

Fig. 1 is a cross-sectional view of sheeting with preapplied seam tape taken at lines 2-2 of Fig. 3;

Fig. 2 is a cross-sectional view of the folded sheeting; and

5 Fig. 3 is a diagrammatic depiction of rolling the sheeting.

**Detailed Description**

As shown in Fig. 1, the present invention is sheeting 12 such as EPDM rubber which incorporates a field portion 13 and a first edge 14 and an opposite edge 16. First edge 14 includes a layer of seam tape 15 applied along the edge on a first surface 17 of Sheetting 12. The  
10 opposite edge 16 does not include any seam tape.

The sheeting can be any type of sheeting typically used for roofing applications such as EPDM, thermoplastic elastomer, butyl rubber and PVC. These can be 30 to 100 mils thick and generally are 45 to  
15 60 mils. The seam tape is generally thinner than the sheeting.

The seam tape may be any type of seam tape used in the roofing industry. It may be thermoplastic or thermosetting. Preferably, it is a pressure sensitive tape. There are several commercially available seam tapes available for use in the roofing industry. Although the width  
20 of the seam tape can vary depending on type and application requirements, it will generally be at least about 3 inches wide.

The method of applying the seam tape 15 to membrane sheeting 12 does not form part of the present invention. A pressure sensitive seam tape is generally applied in the factory by first applying a primer layer along the clean edge 14 of the membrane. Subsequently,  
5 the seam tape 15 is pressed against the membrane along the edge 14. The exposed surface of the seam tape is generally covered with a protective release sheeting (not shown).

One way to apply the seam tape is to roll a length of membrane onto a surface such as a floor and manually apply the tape.  
10 The roofing membrane is preferably clean sheeting. If not, any talc or the like must be removed prior to application of the tape.

A double wide tape (i.e., 6-7 inches wide) can be applied along the center line of the sheeting. The sheeting can then be cut along the center of the seam tape to form two sheets of equal width. Again, the  
15 method of forming the sheeting with the applied seam tape forms no part of the present invention.

As indicated by arrow 18, the edge 16 of sheeting 12 is folded over field portion 13 so that the edge 16 rests on surface 17 closely abutting an inner edge 19 of seam tape 15. Seam tape 15 has a  
20 thickness approximately equal to or slightly less than the thickness of the membrane sheeting.

Once the sheeting 12 is folded, it can then be rolled in a standard manner around tube 20, as shown in Fig. 3. As the edge 16 does not overlie the seam tape 15, the folded sheeting has a uniform thickness. Since the entire width of the folded sheeting has a uniform thickness, the diameter of the rolled sheeting remains constant throughout. Thus, rolls of this material can be stacked upon itself and transported in trucks without any significant problems.

In an alternate embodiment not shown in the figures, the edge portion 16 can be folded in the direction opposite arrow 18 so that the overlapped portion 22 is on the side opposite the seam tape 15. However, edge 16 does not overlie the inner edge 19 of the seam tape so that the overall thickness of the folded sheeting is about the same throughout the entire width. This can then be rolled up in the same manner described above.

The rolls of sheeting are transported to a job site where the sheeting is unrolled with two sheets lying side by side with overlapping edges. The release sheet is removed from the seam tape and then this is pressed against the adjacent sheet at overlapped portions to form a lap seam.

Because the seam tape is applied at the factory, minimal work is required at the job site significantly reducing labor. The product

itself is a value added product designed to improve the overall efficiency of a roofing system.

5           This has been a description of the present invention along with the preferred method of practicing the present invention. The invention itself should only be defined by the appended claims whereby we claim: